CLAIMS

We claim:

1. A control system having a communication conduit and an input module, the input module being operably connected to a condition and responsive to a representative signal thereof, the control system comprising:

an output module operably connected to the communication conduit, the output module having a reflex function to convert the representative signal into a state signal, wherein the output module transmits the state signal onto the communication conduit.

2. The control system of claim 1 further including a means for configuring the reflex function.

3. The control system of claim 2 wherein the means for configuring the reflex function is a PC based tool.

4. The control system of claim 1 wherein the communication conduit is a bus.

5. The control system of claim 4 further including a CANopen protocol.

6. The control system of claim 1 wherein the communication conduit is a network.

7. The control system of claim 6 further including a CANopen protocol.

8. The control system of claim 1 further including a master scanner, the master scanner being operably connected to the communication conduit.

9. A reflexive control system having a communication conduit, the reflexive control system comprising:

an input module operably connected to the communication conduit, the

input module being responsive to a condition having a signal representative thereof, wherein the input module transmits the representative signal onto the communication conduit; and,

an output module operably connected to the communication conduit, the output module having a reflex function to convert the representative signal into a state signal wherein the output module transmits the state signal onto the communication conduit.

10. The reflexive control system of claim 9 wherein the input module transmits the representative signal onto the communication conduit in response to a change in the representative signal.

11. The reflexive control system of claim 9 further including a master scanner, the master scanner monitors the output of the output module.

12. The reflexive control system of claim 11 wherein the master scanner is a programmable logic controller.

13. The reflexive control system of claim 11 wherein the master scanner is a field bus coupler.

14. The reflexive control system of claim 9 further comprising a means for configuring the reflex function of the output module for integration with the control system.

15. The reflexive control system of claim 14 wherein the means for configurating is a PC based configuration tool utilized to configure the reflex action within the output module.

16. The reflexive control system of claim 14 further including a master scanner, the master scanner monitors the output of the output module.

17. The reflexive control system of claim 16 wherein the master scanner is a programmable logic controller.

18. The reflexive control system of claim 16 wherein the master scanner is a field bus coupler.

19. The reflexive control system of claim 16 wherein the master scanner comprises the means for configuring the reflex function of the output module.

20. The reflexive control system of claim 19 wherein the master scanner is a programmable logic controller.

21. The reflexive control system of claim 9 wherein the communication conduit is a bus comprising CANopen protocol.

22. The reflexive control system of claim 9 wherein the reflex function comprises firmware in the output module.

23. The reflexive control system of claim 9 further comprising an object dictionary wherein the reflex function is specified in the object dictionary.

24. The reflexive control system of claim 23 further including a master scanner for monitoring the output of the output module, the object dictionary is embedded within the master scanner.

25. The reflexive control system of claim 24 wherein the master scanner is a programmable logic controller.

26. The reflexive control system of claim 9 wherein the communication conduit is a network, the network having a CANopen protocol.

27. A method of controlling a communication system having an input

module and an output module, both modules being operably connected to a communication conduit, the method comprising the steps of:

    sensing a condition, the condition having a signal representative thereof;

    transmitting the representative signal onto the communication conduit in response to a change in the condition;

    receiving the representative signal;

    converting the representative signal to a state signal; and,

    transmitting the state signal onto the communication conduit.

28. The method of claim 27 further including the step of storing the state signal.

29. The method of claim 28 further including the step of monitoring the signal communication of the control system.

30. The method of claim 29 further including the step of storing the state signal on a master scanner.

31. The method of claim 30 further including the step of initializing the control system.

32. The method of claim 31 wherein initializing the control system comprises the steps of:

    configuring a reflex function of the output module; and,

    assigning an address identifier to the input module and the output module.

33. The method of claim 32 wherein configuring the reflex function utilizes a PC based processor.

34. The method of claim 27 wherein a reflex function within an output module converts the representative signal to the state signal.

35. The method of claim 27 wherein the communication conduit is a bus.

36. The method of claim 35 wherein the bus utilizes a CANopen protocol.

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37. The method of claim 27 wherein the communication conduit is a network.

38. The method of claim 37 wherein the network utilizes a CANopen

10   protocol.